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EXAMINER	
STEVENS, BRIAN J	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/556,835	GAEDKE ET AL.	
	Examiner	Art Unit	
	Brian J. Stevens	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,8-10 and 12-17* is/are rejected.

7)☒ Claim(s) *7 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 November 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 7 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Objections

2. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

3. Claim 4 is objected to because of the following informalities: the claim should end with a period rather then a comma. Appropriate correction is required.

Drawings

4. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. Claim 10 recites the limitation "(25, 310, 45)" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 8, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2001-013681 by Hirofumi.

8. Regarding claim 1, Hirofumi teaches a method for data recovery from a time-continuous signal compliant to one or more digital signal formats each having a specific channel bit clock and a sync pattern occurring in regular intervals, the method being comprising the following steps:

sampling the time-continuous signal (See Paragraph [0001], "samples the multi-value data currently recorded on recording media, such as an optical disc, and the

sampling of that multi-value data") at a frequency at least as high as the maximum of all frequencies of the channel bit clocks of the digital signal formats (See Paragraph [0014], "multi-value data is sampled and outputted from the playback signal of the information recorded on the optical disc", since no disc is specified such as a DVD or CD-ROM, any optical disc is sampled, thus at the maximum of all frequencies of the bit clock of the digital signal formats);

analyzing the sampled signal (See Paragraph [0004], "and analog-to-digital conversion mean", which samples the signal) to locate occurrences of one or more of the sync patterns (See Paragraph [0004], " A synchronized signal detection means to detect the above-mentioned pattern"), thereby making available, as an analysis information, where in the sampled signal which ones of the sync patterns are located (See Paragraph [0004], " A synchronized signal detection means to detect the above-mentioned pattern", where in order to detect the signal, the location must also be found. Also see Claim 1, "A multi-value data cycle calculation means to ask for the time interval between the minimums which adjoin the time interval between the adjoining maximum," where the locations are thus passed along to another portion, thus making available for analysis);

calculating from the analysis information a distance information about the distance between consecutive locations of sync patterns (See Claim 1, "A multi-value data cycle calculation means to ask for the time interval between the minimums which adjoin the time interval between the adjoining maximum,");

recognizing, from the analysis information and the distance information, the signal format to which the signal complies (See Paragraph [0020], "the data extraction part 6 samples the data for every cycle computed by the multi-value data cycle calculation part 5 as multi-value data, and outputs it. Thus, based on the pattern data", where the pattern data tells it which signal format the signal complies),

converting the sampled signal into a converted signal which represents the data at the channel bit clock (See Abstract, "data are sampled from information for each prescribed amount for each period by a data extracting part 6 by making either of each maximum value or each minimum value into a reference value, and are outputted").

9. Regarding claim 2, Hirofumi taught the method of claim 1, as described above. Hirofumi further teaches where the step of converting includes the following steps:

calculating from the analysis information and/or the distance information a channel bit rate and/or the channel bit clock (See Paragraph [0020], "the data extraction part 6 samples the data for every cycle computed by the multi-value data cycle calculation part 5 as multi-value data, and outputs it. Thus, based on the pattern data", where the sampling time/bit clock was found from the analysis information), and

converting the sampled signal to the sampling rate defined by the calculated channel bit rate or bit clock (See Abstract, "data are sampled from information for each prescribed amount for each period by a data extracting part 6 by making either of each maximum value or each minimum value into a reference value, and are outputted").

10. Regarding claim 3, Hirofumi taught the method of claim 1, as described above. Hirofumi further teaches additionally including the following step:

after analyzing the sampled signal (See Figure 1, [4], "The synchronized signal primary detecting element 4 achieves the function of a synchronized signal detection means to detect the above-mentioned pattern data of the above-mentioned synchronized signal from the data which was changed by the A/D conversion part 1 and stored in the memory 3.", where the sampled signal is analyzed), providing for further use (See Figure 1, where [4] sends the signal along to [5]) as frame alignment information the locations where sync patterns have been located (See Paragraph [0016], "The multi-value data cycle calculation part 5 detects all the maximums and minimums from the above-mentioned pattern data of the above-mentioned synchronized signal detected by the synchronized signal primary detecting element 4.". See Paragraph [0016], "The function of a sampling means [6] to sample and output data from the information for every above-mentioned specified quantity which was changed by the A/D conversion part 1 for every above-mentioned cycle computed by the multi-value data cycle calculation part 5 by making any one of each above-mentioned maximum and each of the minimum into a fiducial point, and was accumulated in the memory 3 is achieved", where the information from [4] was used for frame alignment when sampled by [6]).

11. Regarding claim 4, Hirofumi taught the method of claim 1, as described above. Hirofumi further teaches including the following step:

after locating a sync pattern occurrence, decoding from a second signal an address information contained therein (See Paragraph [0005], “A synchronized signal detection means to detect each above-mentioned pattern data of the 1st two synchronized signal and the 2nd synchronized signal which adjoin from the data changed by the means”. Also see Paragraph [0008], “The time interval of each maximum in the above-mentioned 2nd pattern data of the 1st synchronized signal of the above detected by the means and each maximum corresponding to the 1st synchronized signal of the above in the above-mentioned 2nd pattern data of the 2nd synchronized signal of the above”. Where in order to compute the time difference, an address/location information must be found/contained in the detection means.).

12. Regarding claim 8, Hirofumi taught the method of claim 4, as described above. Hirofumi further teaches where the sampled signal (See Paragraph [0004], " An analog-to-digital conversion means by which the maximum and the minimum of a multi-value level change into the data of a digital signal the reproduction signal of the multi-value data”) is used as the second signal (See Paragraph [0005], “A synchronized signal detection means to detect each above-mentioned pattern data of the 1st two synchronized signal and the 2nd synchronized signal which adjoin from the data changed by the means”, where the second single has already been sampled).

13. Regarding claim 16, Hirofumi taught the method of claim 1, as described above. Hirofumi further teaches where the time-continuous signal is a readout signal from a

digital storage medium (See Figure 1, [3] being the digital storage medium, See Paragraph [0015], "A memory 3 stores the data changed in the A/D conversion part 1").

14. Regarding claim 17, Hirofumi taught the method of claim 1, as described above. Hirofumi further teaches where the time-continuous signal is a received signal from a digital transmission (See Figure 1, the input to [1]. Also See Paragraph [0018], "A/D conversion part 1 inputs the reproduction signal of an analog signal").

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-013681 by Hirofumi, in view of US 2002/0190203 A1 by Valaskovic et al.

17. Regarding claim 6, Hirofumi taught the method of claim 1, as described above, but does not teach where the step of analyzing employs a cross-correlation. Valaskovic teaches the knowledge of using the step of cross-correlation in order to analyze data to determine a pattern (See Claim 41, "wherein the pattern matching is based on cross-correlation analysis of the actual waveform and reference waveforms"), is well known in the art.

18. It would have been obvious to one of ordinary skill in the art having the teachings of Hirofumi and Valaskovic before them at the time the invention was made, to modify the method of Hirofumi to further include having where the step of analyzing employs a cross-correlation. Through the use of cross-correlation, a specific pattern can be found with great accuracy, thus improving the data being analyzed. One of ordinary skill in the art would be motivated to make the modification to include the step of cross-correlation in order to analyze data to determine a pattern.

19. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-013681 by Hirofumi, in view of US 2003/0151988 A1 by Katayama.

20. Regarding claim 9, Hirofumi taught the method of claim 4, as described above, but does not teach where a maximum likelihood decoder is applied for the decoding step. Katayama teaches the knowledge of having a maximum likelihood decoder as the decoding device (See Abstract, "A reproducing signal obtained from a magneto-optical disk is subjected to maximum-likelihood decode in a maximum-likelihood decoder"), is well known in the art.

21. It would have been obvious to one of ordinary skill in the art having the teachings of Hirofumi and Katayama before them at the time the invention was made, to modify the method of Hirofumi to further include having a maximum likelihood decoder is applied for the decoding step. There are a finite amount of decoders to be used, and it would be obvious to try a maximum likelihood decoder since it would be useful to fit a mathematical model to some type of data. One of ordinary skill in the art would be

motivated to make the modification to include a maximum likelihood decoder as the decoding device.

22. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-013681 by Hirofumi, in view of US 6,788,753 B1 by Brown.

23. Regarding claim 10, Hirofumi taught the method of claim 1, as described above, but does not teach where the analyzing step involves the following sub-steps

a) setting as a current sync pattern a first sync pattern from a finite set of different sync patterns,

b) analyzing the sampled signal to find positions of the current sync pattern,

c) if no positions are being found and the last sync pattern in the set has not been reached, setting as the current sync pattern the next sync pattern from the set and looping back to sub-step b). Brown teaches the knowledge of selecting as a current sync pattern to look for from a finite set of different sync patterns (See Claim 1, “selecting a sync pattern for detection”), then analyzing the sampled signal to find positions of the current sync pattern (See Claim 1, " detecting a sync pattern sequence from the data stream with a first sync detection filter”), then if no positions of the current sync pattern has been found, continue on the list of sync patterns and setting to look for the next sync pattern by starting over in the incoming data stream (See Claim 1, " if detection of the subsequent sync pattern fails a predetermined number of sequential times, using a second sync detection filter to detect a new sync pattern”), is well known in the art.

24. It would have been obvious to one of ordinary skill in the art having the teachings of Hirofumi and Brown before them at the time the invention was made, to modify the method of Hirofumi to further include having the analyzing step involves the following sub-steps a) setting as a current sync pattern a first sync pattern from a finite set of different sync patterns, b) analyzing the sampled signal to find positions of the current sync pattern, c) if no positions are being found and the last sync pattern in the set has not been reached, setting as the current sync pattern the next sync pattern from the set and looping back to sub-step b). Since multiple different types of sync patterns are known depending upon what type data is being transmitter; by having the analyzer choose a first sync pattern to search for rather then multiple ones at once, makes the circuitry smaller less costly to produce. One of ordinary skill in the art would be motivated to make the modification to include selecting as a current sync pattern to look for from a finite set of different sync patterns, then analyzing the sampled signal to find positions of the current sync pattern, then if no positions of the current sync pattern has been found, continue on the list of sync patterns and setting to look for the next sync pattern by starting over in the incoming data stream.

25. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-013681 by Hirofumi, in view of US 2002/0045461 A1 by Bongfeldt.

26. Regarding claim 12, Hirofumi teaches an apparatus for recovering a channel bit clock from a time-continuous signal compliant to one or more digital signal formats each

having a specific channel bit clock and a specific framing structure including a sync pattern occurring in regular intervals, the apparatus including:

sampling means which generate a sampled signal from the time-continuous signal (See Paragraph [0001], “he multi-value data sampling equipment applied to the optical disk unit which plays and samples the multi-value data currently recorded on recording media, such as an optical disc”);

analogue to digital conversion means (See Figure 1, [1]) connected to the sampling means (See Figure 1, where [1] receives a sampled signal from the “sampling means”) and sample rate conversion means (See Figure 1, [3], [4], [5] and [6]);

the apparatus comprised:

an analyzer (See Figure 1, [4]) adapted to analyze the sampled signal to locate occurrences of one or more of the sync patterns (See Paragraph [0015], “synchronized signal primary detecting element 4 achieves the function of a synchronized signal detection means to detect the above-mentioned pattern data of the above-mentioned synchronized signal from the data which was changed by the A/D conversion part 1 and stored in the memory 3”),

a calculator (See Figure 1, [5]) adapted to calculate a channel bit rate and/or the channel bit clock from the locations where sync patterns are located (See Paragraph [0019], where the channel bit rate is found), but does not teach and

a format recognizer adapted to recognize, from the analysis information and the distance information, the signal format to which the signal complies. .

Hirofumi further teaches wherein the sample rate conversion means (See Figure 1, [6]) convert its input data to output data obeying an output sample rate equal to the channel bit rate or bit clock as calculated by the calculator (See Paragraph [0016], "the data extraction part 6] The function of a sampling means to sample and output data from the information for every above-mentioned specified quantity which was changed by the A/D conversion part 1 for every above-mentioned cycle computed by the multi-value data cycle calculation part 5 by making any one of each above-mentioned maximum and each of the minimum into a fiducial point, and was accumulated in the memory 3 is achieved").

Bongfeldt teaches the knowledge having a format recognizer (See Figure 2, [42]) that can recognize the signal format of a signal (See Paragraph [0068], "the micro controller 42 to determine the signal format") that has been sampled (See Paragraph [0068], "supplies an RF sample signal), though analysis of that signal (See Paragraph [0068], "selectable BPF 100 and detection log amplifier 102 operate to detect the power level and number of desired RF signals within the uplink channel 36, and this information can be used"), is well known in the art.

27. It would have been obvious to one of ordinary skill in the art having the teachings of Hirofumi and Bongfeldt before them at the time the invention was made, to modify the apparatus of Hirofumi to further include having a format recognizer adapted to recognize, from the analysis information and the distance information, the signal format to which the signal complies. In order to know which type of signal needs to be re-sampled and output correctly, a unit would need to be present to determine which

method would be used to output the signal accurately. One of ordinary skill in the art would be motivated to make the modification to include having a format recognizer that can recognize the format of a signal that has been sampled, though analysis of that signal.

28. Regarding claim 13, Hirofumi together with Bongfeldt taught the apparatus of claim 12, as described above. Hirofumi further teaches where the sample rate conversion means (See Figure 1, [3], [4], [5] and [6]) includes two or more units working in parallel (See Figure 1, [3] with [4] and [5] as unit 1 and [3] and [6] working as unit 2), each consisting of a storage means (See Figure 1, [3] for both units 1 and 2) and an associated interpolation means (See Figure 1, [4] and [5] for unit 1, and [6] for unit 2).

29. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-013681 by Hirofumi, in view of US 2002/0045461 A1 by Bongfeldt, in further view of US 4,641,364 by Bass et al.

30. Regarding claim 14, Hirofumi together with Bongfeldt taught the apparatus of claim 12, as described above, but do not teach additionally including a sync ID decoder triggered by the analyzer having located a sync pattern occurrence, the sync ID decoder decoding the sync IDs from the sample rate converted digitized signal.

Bass teaches the knowledge of a sync ID decoder (See Figure 2, [56]) that is triggered by an analyzer section (See Figure 3) that has located a sync pattern

occurrence (See Column 5, Lines 20-24) from the sampled signal (See Column 3, Lines 29-30), is well known in the art.

31. It would have been obvious to one of ordinary skill in the art having the teachings of Hirofumi, Bongfeldt and Bass before them at the time the invention was made, to modify the apparatus of Hirofumi and Bongfeldt to further include a sync ID decoder triggered by the analyzer having located a sync pattern occurrence, the sync ID decoder decoding the sync IDs from the sample rate converted digitized signal. Finding a sync pattern is not enough to determine which type of sync is being transmitter. A sync ID decoder would determine what type of data format is being transmitted and to continue or abort (as show above), the type of processing that is being performed. One of ordinary skill in the art would be motivated to make the modification to include a sync ID decoder that is triggered by an analyzer section that has located a sync pattern occurrence from the sampled signal.

32. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-013681 by Hirofumi, in view of US 2002/0045461 A1 by Bongfeldt, in further view of US 6,788,753 B1 by Brown.

33. Regarding claim 15, Hirofumi together with Bongfeldt taught the apparatus of claim 12, as described above, but do not teach where the analyzer includes a sync pattern selector for selecting as current sync pattern one sync pattern from a finite set of different sync patterns and a loop back controller for looping back to an analyzing step whenever for a certain current sync pattern no occurrences have been found.

Brown teaches the knowledge of selecting as a current sync pattern to look for from a finite set of different sync patterns (See Claim 1, “selecting a sync pattern for detection”), then analyzing the sampled signal to find positions of the current sync pattern (See Claim 1, " detecting a sync pattern sequence from the data stream with a first sync detection filter”), then if no positions of the current sync pattern has been found, continue on the list of sync patterns and setting to look for the next sync pattern by starting over in the incoming data stream (See Claim 1, " if detection of the subsequent sync pattern fails a predetermined number of sequential times, using a second sync detection filter to detect a new sync pattern”), is well known in the art.

34. It would have been obvious to one of ordinary skill in the art having the teachings of Hirofumi, Bongfeldt and Brown before them at the time the invention was made, to modify the apparatus of Hirofumi and Bongfeldt to further include having the analyzer include a sync pattern selector for selecting as current sync pattern one sync pattern from a finite set of different sync patterns and a loop back controller for looping back to an analyzing step whenever for a certain current sync pattern no occurrences have been found. Since multiple different types of sync patterns are known depending upon what type data is being transmitter; by having the analyzer choose a first sync pattern to search for rather then multiple ones at once, makes the circuitry smaller less costly to produce. One of ordinary skill in the art would be motivated to make the modification to include selecting as a current sync pattern to look for from a finite set of different sync patterns, then analyzing the sampled signal to find positions of the current sync pattern, then if no positions of the current sync pattern has been found, continue on the list of

sync patterns and setting to look for the next sync pattern by starting over in the incoming data stream.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,826,245 B1 by Brown et al

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Stevens whose telephone number is (571)270-3623. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BS
/Brian J. Stevens/

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611